

We claim:

1. A protective film, comprising:
a protective layer having a first surface and a second surface and a tensile modulus
5 of from 400 to 2100 MPa, wherein the protective layer comprises an amorphous
thermoplastic polyester resin;
a toughening layer having a first surface and a second surface, wherein the
toughening layer comprises a polyurethane resin having a glass transition temperature in
the range of from -50°C to 0°C, and wherein the second surface of the protective layer is
10 attached to the first surface of the toughening layer; and
an adhesive layer having a first surface and a second surface, wherein the first
surface of the adhesive layer is bonded to the second surface of the toughening layer.
2. The protective film of claim 1, wherein the adhesive layer comprises an acrylic
15 pressure sensitive adhesive.
3. The protective film of claim 1, further comprising a decorated interface between
the protective layer and the toughening layer.
- 20 4. The protective film of claim 1, wherein the first surface of the protective layer
comprises indicia thereon.
5. The protective film of claim 1, wherein the toughening layer contains a pigment.
- 25 6. The protective film of claim 1 wherein the amorphous thermoplastic polyester has
a glass transition temperature in the range of from 20°C to 60°C.
7. A decorated article, comprising:
a) a protective film comprising:
30 (i) a protective layer having a first surface and a second surface and
has a tensile modulus of 400-2100 MPa; wherein the protective layer comprises an
amorphous thermoplastic polyester resin;

(ii) a toughening layer having a first surface and a second surface, wherein the toughening layer comprises a polyurethane resin having a glass transition from -50°C to 0°C, and wherein the second surface of the protective layer is attached to the first surface of the toughening layer; and

5 (iii) an adhesive layer having a first surface and a second surface, and wherein the first surface of the adhesive layer is bonded to the second surface of the toughening layer; and

b) an substrate having at least one major surface, wherein the second surface of the adhesive is adhered to and conformed to the major surface of the substrate,

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8. The article of claim 7, wherein the amorphous polyester resin has a glass transition temperature in the range of from 20°C to 60°C.

9. The article of claim 7, wherein the toughening layer is pigmented.

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10. A method of preparing a protective film, comprising the steps of:

providing a layer of a thermoplastic amorphous polyester resin having a tensile modulus of 400-2100 MPa, the layer having first and second opposed surfaces;

20 applying a layer of a polyurethane resin having a glass transition temperature of -50°C to 0°C to the second surface of the polyester resin layer; and

applying an adhesive layer to the polyurethane resin layer.

11. The method of claim 10, further comprising the step of applying indicia to the first surface of the polyester resin layer.

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12. The method of claim 11, wherein the step of applying indicia to comprises embossing the first surface of the polyester resin layer.

13. The method of claim 10 further comprising the step of printing the layer of polyurethane resin layer.

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14. The method of claim 10 further comprising the step of applying indicia to the second surface of the polyester resin layer.

15. The method of claim 10 further comprising the step of providing indicia between the polyester resin layer and the polyurethane resin layer.

16. A method of preparing a protected article, comprising the steps of:
providing the protective film of claim 1;
applying the second surface of the adhesive layer to a substrate;
heating the protective film; and
conforming the protective film to the article.

17. The method of claim 16, wherein the amorphous thermoplastic polyester resin has a glass transition temperature of from 20°C to 60°C.